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ABSTRACT

This study assessed educational needs and interests of West Virginia adults related to the proposed extension of distance education through Project Breakthrough. Project Breakthrough will broadcast college credit telecourse via satellite into more than 50,000 home satellite receivers. Results show an overall positive attitude toward additional education. Approximately one-third of the general households and satellite respondents were interested in participating in Project Breakthrough, and 61% of the students enrolled in Regents Bachelor of Arts programs and 72% of the adults taking telecourses through public television reported a similar interest. Access to Project Breakthrough telecourses can be increased through receiver sites at public libraries and telecasts on public television. Timing of telecourses is irrelevant due to the ability to pre-record telecourses on VCRs. Preferred fields of study were computer and information processing, general studies, and small business management. The implementation model for the project consists of a C-band uplink, which can transmit to C-band satellite receivers at all higher education institutions, numerous educational facilities, libraries, businesses, and homes. The curricular philosophy of Project Breakthrough is framed in the seven principles of good practice for undergraduate education. A key component of the project is the resource network that provides diverse and wide-ranging support services to students. (KS)

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PROJECT BREAKTHROUGH:

A TELECOURSE MODEL FOR THE MOUNTAIN STATE

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Project Breakthrough is a telecourse model designed to make college credit courses more accessible to adult learners. With major funding from the Annenberg/CPB Project, West Virginia University provided the leadership for this new paradigm of post-secondary education. Project Breakthrough proposes to extend the distance education paradigm by broadcasting telecourses via satellite into more than 50,000 home satellite receivers presently dotting the the landscapes of West Virginia.

West Virginia became a primary consideration for satellite telecourses for a number of reasons:

a.) The terrain, with its majestic beauty, is comprised of steep mountains and winding river beds, which can hinder highway travel and information access. Many rural residents find secondary roads do not lend themselves to travel, especially during the winter months.

b.) West Virginia is the second most rural state in the U.S. based on the number or residents living in rural areas. This is one factor which attributes to the popularity of home satellite receivers.

c.) West Virginia ranks last nationally in the number of adults who have a college education of 4 years or more. Of the approximately one million adults living in the state, only about 10.4 percent have achieved a college education as compared to the national average of over 16 percent. To reach the national average, West Virginia needs to educate 65,528 adults with 4 or more years of college.

d.) The state also ranks last nationally in adults with 1 to 3 years of

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college. The national average is 32 percent as compared to West Virginia's 20.4 percent or 114,704 more adults to meet the national average.

e.) West Virginia ranks near last in population growth with a -4.1 per cent population change from 1980 to 1987. Young people, in particular, are leaving the state for greater employment opportunities.

Since West Virginia has the lowest college-going rate per capita and traditionally low educationally motivated values, we believe that the Project must provide attainable goals within a reasonable time, while being applicable to a four year degree program. To increase motivation, participation and to insure success, the courses must reflect the interest of most people. Coupled with basic demographics, this criteria provided the basis for the research questionnaire.

Research:

The 1989-90 grant from the Annenberg/CPB Project, coordinated by WVU's Center for Extension and Continuing Education, allowed statewide research to assess adult educational needs and interests in approximately 10,000 West Virginia households. The questionnaire was designed to conduct an educational needs assessment of four populations: a.) general West Virginia households (5,506), b.) households with home satellite receivers (3,523), c.) adults currently taking telecourses through public television (200), and d.) adults enrolled in the Regents Bachelor of Arts program (300). Survey findings were concentrated in the following areas of assessment: a.) demographic profile of total respondent populations, b.) attitudes toward additional education, c.) attitudes toward participating in Project Breakthrough, d.) accessibility to telecourses, e.) scheduling of telecourses, f.) preference of degree and fields of study, g.)marketing and motivational factors and h.) respondent requesting additional information about Project Breakthrough.

Demographic Profile of Total Respondent Population:

Based on a response rate of nearly 18%, the majority of survey respondents were female with the exception of the satellite respondents. Ninety-five percent of the respondents were beyond the traditional college age student range of 18-22 years with the largest proportion (44%) between 36 and 50 years of age. Ninety (90%) percent of the HEITV and RBA respondents were employed either full or part time compared to approximately 60 percent of the general populations and satellite respondents. As anticipated, the satellite respondents were most likely to live in a rural area (84%) followed by HEITV respondents (57%).

An analysis of this data reveals that a significant percentage of respondents are potential candidates for higher education at the undergraduate level. More specifically, the percentage of respondents having at least a high school diploma, but less than a bachelor's degree, includes 60 percent of the general population, 68 percent of the satellite respondents, 75 percent of the HEITV respondent and 67 percent of the RBA respondents.

Attitudes Toward Additional Education:

A very high percentage of HEITV (86%) and RBA (81%) indicated an interest in additional education. More surprising, is the positive response rate among the general household (42%) and satellite (38%) respondents. It is apparent that among the respondents there is considerable interest in additional education.

Respondents who were interested in further education were asked to indicate the level of study that they would like to undertake next. The level of interest in undergraduate education categories ranged from 19 percent for the general household and satellite respondents to 73 percent for the HEITV respondents.

The respondents were asked if they were currently participating in a college-level program. As anticipated, HEITV (37%) and RBA (52%) included

higher percentages of of participating students, while considerably fewer satellite dish owners (7%) and general household (8%) were active students at the college level.

Attitudes About Participating in Project Breakthrough:

Respondents were asked about their interest in participating in Project Breakthrough. Approximately one-third of the general household and satellite respondents were interested in participating in Project Breakthrough, and 61 percent of the RBA and 72 percent of the HEITV samples reported a similar interest.

All further findings are based on responses of individuals who expressed an interest in Project Breakthrough and who have at least a high school diploma or General Education Diploma but less than a bachelor's degree. These individuals have been targeted as the audience most likely to participate in Project Breakthrough. Individuals who were not interested, not sure of their interest, or educationally qualified were excluded from further analysis.

The targeted population responses indicate women with a high school diploma and some college, who live in a rural area and are employed full time as the primary demographic profile. The most frequently reported age categories were 23 to 35 years among the general household and 36 to 50 years for the other three groups.

As predicted, the HEITV and RBA populations reported higher percentages of current participation in college courses. However, two-thirds or greater of all populations were interested in Project Breakthrough for career reasons over personal ones. The definite career focus, reinforces Project Breakthrough's goal of providing a business degree program as well as providing adult learners with a general studies or "core" curriculum that is applicable to nearly all program options and particularly relevant to the Regents Bachelor of Arts degree.

Access to Project Breakthrough Telecourses:

The original intent of Project Breakthrough was to transmit telecourses to adults living in rural areas via satellite with homes targeted as primary receive sites. While rural residents remain a primary focal group, it is apparent that other potential audiences exist, many of whom do not have access to satellite receivers. Only 8 percent of the targeted participants in the general household survey had a home satellite receiver. An additional 12 percent had access to a satellite receiver at their workplace or another location.

To increase access to telecourses, several alternative delivery models will be incorporated that reflect the technologies available to the survey respondents. For example, three-fourths of the targeted general household respondents live within 10 miles of the nearest public library and over 88 percent own a VCR. This suggests that the public library system could provide a valuable educational service through the recording and redistribution of telecourses or by establishing a receive site "classroom". Over 75 vocational-technical centers have classrooms equipped with a satellite receiver and are within twenty miles of nearly three-quarters of the targeted general household population. West Virginia Public Television reaches approximately 79 percent of this targeted population and provides an excellent vehicle for this cooperative venture.

Project Breakthrough's resource network establishes the local college/university as the nucleus for student support. Therefore, it is noteworthy that 63 percent of the targeted general household respondents live within 20 miles of the nearest state college, community college, or university. In further support of Project Breakthrough's resource network paradigm, 70 percent of the targeted respondents live within 20 miles of the nearest county extension office, a key link in student recruiting, motivation and communication.

Scheduling of Project Breakthrough Telecourses:

Fifty percent of the targeted respondents indicated that the timing of the telecourses did not matter since they own a VCR and thus can pre-record telecourses to be viewed at their convenience. The time of day cited most frequently was between 9 and 11 P.M.. Additionally, there was no concensus for preference on day of week, however weekdays were preferred over weekends.

Preference of Degree and Fields of Study:

A high percentage of the targeted respondents expressed an interest in pursuing a certificate or associate degree and then eventually working toward a bachelor's degree. This finding clearly reinforces the intent of Project Breakthrough, which will offer a progression of studies for students who will begin study in a certificate or associate degree program while progressing toward a Regents Bachelor of Arts degree.

Fields of study identified most frequently were computer and information processing (34-50%), general studies (34-40%), and small business management (30-38%).

Marketing and Motivational Factors:

A key objective of the survey was to assess various marketing and motivational factors to be used in the design and implementation of Project Breakthrough. Respondents were asked to assess their level of confidence in their ability to take college-level courses. Their responses indicate a high level of confidence, particularly among HEITV and RBA respondents.

Targeted respondents were asked how they would pay for their tuition and books, estimated at $150 per course. The majority of the respondents (64%) expected to use personal funds. More than one-third of the RBA students (37%) expected their employers to pay for their college education.

Across all survey groups, targeted respondents view job and family responsibilities as barriers to furthering their education, followed by educational costs, and distances from college campuses. Project Breakthrough seeks to overcome these barriers and is thus viewed as a viable opportunity for non-traditional adult learners to participate in college credit courses.

Respondents were asked the following question: "As a potential student of Project Breakthrough, indicate how important the following factors are in your decision to participate in this program.". Their responses clearly indicate that convenience and accessibility are key factors, plus having high quality courses and instructors, including courses that will help in their careers. Also important was the availability of financial assistance or student services, such as advising, registration, counseling and tutorial assistance. A third or more felt that financial assistance was very important and a total of 46 to 62 percent thought that financial assistance was either important or very important.

Respondents Interested in Receiving Additional Information:

A clear indication of the level of potential interest in Project Breakthrough was evident from the number of names and addresses requesting additional information. From the total respondent population of 1708, there were 1284 names and addresses of persons requesting additional information.

Research Conclusions:

The research provides relevant evidence that the need and motivation within West Virginia's adult population for accessible college credit does exist. This research provides the foundation for a conservative estimate that 5,700 adults may initially be interested in Project Breakthrough college credit telecourses. With this potential student base and an effective statewide marketing strategy, Project Breakthrough opens new paradigms in accessible educational opportunities for adults.

Implementation Model

The grant provided the opportunity for statewide research to be conducted and an implementation model specific to the needs of West Virginians could be developed. A major component of the model is the collaboration of higher education institutions, the West Virginia Library Commission, the West Virginia Educational Broadcasting Authority, the WVU Extension Service, and various grassroots organizations.

Technology Delivery:

West Virginia Higher Education established a statewide satellite delivery program in 1987, known as SatNet. With the C-band uplink installed at Institute, W.V., telecourses could be transmitted to C-band satellite receivers (downlinks) at all higher education institutions, numerous educational facilities, libraries, businesses and homes. The existing technology provides a good basis for higher education telecourse outreach.

Presently, it is possible to broadcast satellite credit courses from four locations in the state. SatNet is connected through the microwave system of the Educational Broadcasting Authority and three Public Broadcasting Stations. Live instruction will be sent via microwave from the institutions to the C-band uplink or can be transmitted from the electronic classroom at the uplink studio. Negotiations are underway to connect a fiber optic segment between northern West Virginia and Charleston. This network makes it possible for any faculty in the state system to provide credit instruction via SatNet. It is important to note that courses offered through SatNet are available for cross-listing by any of the public and some private higher educations institutions in the state.

Instruction:

Project breakthrough provides the opportunity for state higher education institutions to highlight outstanding faculty through instructional telecourse delivery. Faculty members identified as outstanding instructors/researchers are being invited to become faculty-of-record for Project Breakthrough telecourses. The project staff advises faculty members about available software, technical/interactive aspects of telecourses, non-traditional adult learner research and video presentation skills.

The specific course design format will incorporate pre-produced video-software (two 30 minute tapes) with 60 minutes of live instruction/interaction for 15 weeks (including alternative times for examinations, research or specially scheduled events). Our research indicates that many adults will videotape the classes, thereby missing the professor-student live interaction. Therefore, students will have opportunities to contact professors during alternatively scheduled office hours. In addition, questions may be facsimiled/mailed to the professor's office for response, or the Project Breakthrough toll-free line can relay the question or offer additional assistance. Special on-campus learning/experiencing sessions to augment telecourses will be offered at nearby campuses. Student support groups provide yet another avenue of interaction and feedback.

The curricular philosophy of Project Breakthrough is framed in the seven principles of good practice for undergraduate education cited in the American Association for Higher Education Bulletin (March, 1987):

a. Faculty-student contact encouraged: Because telecommunication are frequently identified as an isolated approach to learning, it is important to provide a variety of interactive possibilities. Project Breakthrough encourages: 2-way interactive audio communication during class, toll-free phone communication, incorporation of printed text, facsimile/mail communication, computer networking and on-campus meetings.

b. **Collaborative learning**: Even though distance learning is preferred by more mature, independent learners, Project Breakthrough provides access to a network of other adult learners in their area who are also taking specific telecourses. Through the registration format, the Project Breakthrough will encourage geographically located adults to participate in group interaction at local public libraries, worksites, or individual homes; contact each other through telephone/mail communications; and/or seek assistance through identified community mentors/tutors.

c. **Active learning** encouraged: Pedagogy and theory that applies to previous life experiences is an instructional strategy which encourages active involvement by the student with greater retention and application to new situations. Non-traditional students bring a wealth of life-experience that adds new dimensions to curricular application. Kalamas (1987) states, "One advantage adults have over youth in their ability to learn is a broad range of experience. These experiences enhance their ability to perceive, process, and use information and provide a foundation for gaining additional knowledge."

d. Prompt feedback: While this has long been known as an effective learning strategy, it has also been a weakness in distance education courses. Project Breakthrough has identified a variety of measures which are aimed at increasing the expediency of feedback responses. These include providing access to facsimile machines in rural locations, toll-free telephone communications, electronic mail, and computer networking for student-to-teacher requirements. The instructors will be financially supported for assistance in grading and responding to student assignments and/or questions. Collaborative learning groups and mentor/tutors will also provide opportunities for content and assignment dialog.

e. Communicate High Expectations: Part of the faculty training will include communicating high performance standards and clear course objectives. Research confirms the premise that non-traditional learners bring a higher level of intellectual maturity and achievement expectancies to their studies than their traditional counterparts (Imel, 1982; Brookfield, 1986; Kalamas, 1987).

f. Time on Task: Telecourses allow responsible adults to use time more effectively by viewing telecourses at a convenient time for attentive viewing and interaction. Adults are time-conscious learners because of their many roles. Most adult learners want to meet their educational goals directly, quickly and efficiently. This is reason why telecourses are so popular with more effective use of time on task. Adults will also have the option of taping courses for later viewing and reviewing.

g. Respects Diverse Talents and Ways of Learning: Telecourse allow for the autonomy that the adult learner demands. Project Breakthrough expands the telecourse delivery method to include options for a variety of learning styles: independent-self-directed study; collaborative learning interaction; a combination of video, audio and printed text; teacher-directed; and/or instructional mentorship/coaching.

Telecommunications technology allows educational access at a convenient time and place for non-traditional students such as: working adults-who have limited access because of work schedules; people at home caring for children or the elderly; the unemployed who want to gain marketable skills or reinforce their existing skill base; adults who are physically handicapped or restricted due to health reasons; adults who have earned their GED through tv courses; the elderly or others interested in lifelong learning opportunities. Project Breakthrough is therefore a plan to provide telecourses at a convenient time and place to a variety of adult learners, while providing a network of support services which insure a successful learning experience.

Student Support Network:

A key component of Project Breakthrough is the resource network. This network provides support services which are diverse and wide-ranging. Services may include:

0 academic, career and financial counseling from the individual higher education advising services;

0 registration services, information access, potential receive sites, and marketing from extension offices in all WV counties;

0 reference material, on-site viewing, videotaped lectures/programs, encouragement and information from public libraries;

0 tutoring from retired teachers and community professionals;

0 scholarships from local community groups and businesses;

0 information access through the Project Breakthrough toll-free line; and 0 emotional and academic support from a Project-identified local student support network promoting collaborative learning.

The professional personnel of these area resource networks represent a powerful foundation of personal support and encouragement in nearly every community.

The nearest higher education institution is the nucleus of this network. As students enroll in telecourses through their nearest institution, they become advisees of that institution, entitled to all services available to other students. The institutions are, thus, the center of a student's academic focus.

The project manager at West Virginia University is the key facilitator and coordinator of network functions. An 800 telephone line, facsimile machine, Extension Service electronic mail, and on-line computer services at the Project Breakthrough offices will enable any of the network's members or students to communicate easily with the project staff.

With the added support of public libraries, school personnel, community organizations, extension faculty, business, industry and other professionals and volunteers, the higher education network becomes unified. This unification brings strength which, in turn, directly benefits the non-traditional learner.

In Conclusion:

Project Breakthrough and telecommunications access will provide an educational opportunity that challenges barriers to higher education and will be a major catalyst in the non-traditional students' pursuit of higher education. West Virginia leaders are dedicated to meeting the challenges to bring about educational and economic change. Project Breakthrough is a vehicle through which these changes can occur.

The West Virginia hills are taking on a new look. The technology of challenge and change is in evidence, bringing with it the equipment for accessible learning opportunities today and the hope for a brighter way of life tomorrow.

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